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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,638	04/06/2001	Robert Edward Touhsaent	2001B025/RMH10185(PL00-24	5507

23455 7590 03/31/2003

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EXAMINER	
AHMED, SHEEBA	
ART UNIT	PAPER NUMBER
1773	4

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n No.	Applicant(s)	
	09/828,638	TOUHSAENT, ROBERT EDWARD	
	Examiner	Art Unit	
	Sheeba Ahmed	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2 and 3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 15, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301).

Jensen et al. disclose a printable facestock structure ***(corresponding to the printable plastic film of claim 1 or the label of claim 20)*** comprising a polymeric film substrate ***(corresponding to the substrate layer of the claimed invention)*** having on a first surface an adhesive anchor layer and on a second surface an ink base layer ***(corresponding to the printable coating composition layer of the claimed invention)*** wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid ***(corresponding to the iminated anionic acrylic polymer of the claimed invention)*** (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of

0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27).

Jensen et al. do not teach that the ink base layer further comprises an epoxy acrylate.

However, Curatolo discloses radiation curable compositions, which may be deposited on polymeric films to improve their printability and other surface characteristics (Column 1, lines 5-9). The composition comprises polyfunctional acrylate oligomers such as epoxy acrylates (Column 6, lines 8-21) and imparts improved ink adhesion, chemical resistance, moisture resistance and weathering resistance to the substrates (Column 11, lines 56-64).

Accordingly, it would have been obvious to one having ordinary skill in the art to add an epoxy acrylate to the ink base layer disclosed by Jensen et al. given that Curatolo specifically teaches that doing so imparts improved printability, ink adhesion, chemical resistance, moisture resistance and weathering resistance to plastic film substrates.

2. Claims 2-5, 9-11, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Houde (US 6,406,775B1).

Jensen et al. disclose a printable facestock structure comprising a polymeric film substrate having on a first surface an adhesive anchor layer and on a second surface an ink base layer wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Curatolo, on the other hand, discloses radiation curable compositions, which may be deposited on polymeric films to improve their printability and other surface characteristics (Column 1, lines 5-9). The composition comprises polyfunctional acrylate oligomers such as epoxy acrylates (Column 6, lines 8-21) and imparts improved ink adhesion, chemical resistance,

moisture resistance and weathering resistance to the substrates (Column 11, lines 56-64).

Jensen et al. and Curatolo do not teach that the anionic acrylic polymer is crosslinked with a polyfunctional aziridine.

However, Houde discloses compositions that are useful as printing media (Column 1, lines 6-10) and wherein the binder is crosslinked to provide improved abrasion and weather resistance using a polyfunctional aziridine (Column 10, lines 22-25). The polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out-gassing (Column 11, lines 1-10).

Accordingly, it would have been obvious to one having ordinary skill in the art to crosslink the anionic acrylic polymer, comprising the ethylenically unsaturated carboxylic acid monomer, with a polyfunctional aziridine given that Houde discloses that crosslinking the binder provides improved abrasion and weather resistance and that polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out-gassing.

3. Claims 2, 6-8, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) in view of Curatolo (US 5,804,301) and Karim (US 5,883,193).

Jensen et al. disclose a printable facestock structure comprising a polymeric film substrate having on a first surface an adhesive anchor layer and on a second surface

an ink base layer wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Curatolo, on the other hand, discloses radiation curable compositions, which may be deposited on polymeric films to improve their printability and other surface characteristics (Column 1, lines 5-9). The composition comprises polyfunctional acrylate oligomers such as epoxy acrylates (Column 6, lines 8-21) and imparts improved ink adhesion, chemical resistance, moisture resistance and weathering resistance to the substrates (Column 11, lines 56-64).

Jensen et al. and Curatolo do not teach that the anionic acrylic polymer is crosslinked with an epoxy silane using a catalyst such as imidazole.

However, Karim discloses a thermosettable composition which allows adhesion to be maintained under conditions of high humidity (Column 1, lines 6-8). The composition comprises polymerizable acrylic or methacrylic acid ester, an epoxy resin, a silane coupling agent and an accelerator (Column 1, lines 34-40). Useful silane agents include epoxy silanes used with an imidazole accelerator. Imidazoles are insoluble in the methacrylate and epoxy components and particularly suitable as accelerators because of their ability to extend shelf life of compositions (Column 6, lines 20-26).

Accordingly, it would have been obvious to one having ordinary skill in the art to crosslink the anionic acrylic polymer with an epoxy silane using an imidazole accelerator given that such compositions allow adhesion to be maintained under conditions of high humidity and given that imidazoles are insoluble in the methacrylate and epoxy components and particularly suitable as accelerators because of their ability to extend shelf life of compositions.

4. Claims 1, 2, 12-14, 15, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. (US 5,662,985) over Houde (US 6,406,775 B1) and Saint Victor (US 6,225,389).

Jensen et al. disclose a printable facestock structure ***(corresponding to the printable plastic film of claim 1 or the label of claim 20)*** comprising a polymeric film substrate ***(corresponding to the substrate layer of th claimed invention)*** having on a first surface an adhesive anchor layer and on a second surface an ink base layer

(corresponding to the printable coating composition layer of th claimed invention) wherein the ink base layer may be an iminated polymer of methyl methacrylate, an alkyl acrylate and an ethylenically unsaturated carboxylic acid ***(corresponding to the iminated anionic acrylic polymer of the claimed invention)*** (Column 1, lines 34-37, lines 44-46 and Column 4, lines 14-67). The coatings are applied to the substrate by any known method and wherein the substrate has been surface treated and primed ***(thus indicating that a primer layer is present between the substrate and the coating layer)*** (Column 9, lines 3-7). The coating is applied in an amount such that it results in a dry evenly distributed coating having a coat weight of 0.9 to 1.1 g/m^2 ***(thus indicating that the dry coating weight is at least 0.1 g/1000 in^2)*** Column 9, lines 13-14). The coatings may be formulated with solid finely divided inorganic material, such as colloidal silica, to function as a slip agent ***(thus indicating that the coating comprises dispersed particulates)*** (Column 10, lines 13-16). An adhesive layer ***(corresponding to the optional adhesive layer of claim 20)*** may be positioned adjacent to the adhesive anchor layer (Column 10, lines 24-27). Houde, on the other hand, discloses compositions that are useful as printing media (Column 1, lines 6-10) and wherein the binder is crosslinked to provide improved abrasion and weather resistance using a polyfunctional aziridine (Column 10, lines 22-25). The polyfunctional aziridine reacts with reactive groups such as carboxylic acids and becomes completely incorporated into the coating without any leaching or out- gassing (Column 11, lines 1-10).

Jensen et al. and Houde do not teach that the ink base layer further comprises an epoxy acrylate.

However, Saint Victor discloses a substantially zero VOC, water-dispersible coating composition for printing or non-printing purposes and comprising an epoxy acrylate oligomer. The composition significantly reduces the amount of energy and times required to effect curing. The oligomer is formed by reacting an epoxide with an unsaturated acid such as acrylic or methacrylic acid. Useful epoxides include glycidyl ethers of polyhydric alcohols (Column 2, lines 12-15, 20-24, and 59-67) such as diglycidyl ether of diethylene glycol or dipropylene glycol (Column 4, lines 9-15). The product of the reaction is an epoxy methacrylate compound having a main chain of polyepoxide and both terminals of a methacrylate group (Column 5, lines 25-30). To prevent the premature or undesirable polymerization of the product or the reactants, it is advantageous to add a vinyl inhibitor, such as hydroquinone, to the reaction mixture (Column 6, lines 16-27).

Accordingly, it would have been obvious to one having ordinary skill in the art to add an epoxy acrylate oligomer, formed by reacting an glycidyl ether of diethylene glycol or dipropylene glycol with an unsaturated acid such as acrylic or methacrylic acid, and to add a vinyl inhibitor, such as hydroquinone, to the ink base layer composition disclosed by Jenson et al. given that Saint Victor specifically teaches that their epoxy acrylate has low VOC, is water dispersible and significantly reduces the amount of energy and times required to effect curing and that the hydroquinone prevents the premature or undesirable polymerization of the product or the reactants.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703)305-0594. The examiner can normally be reached on Mondays and Thursdays from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703)308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-5408 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5665.

Sheeba Ahmed
Art Unit 1773
March 24, 2003